

### **AMENDMENTS TO THE CLAIMS**

1. (Currently amended) A method of forming an electrolyte layer comprising an electrolyte composition and a matrix polymer, the method comprising:  
forming the matrix polymer by polymerization of a first compound having at least two isocyanate groups and a second compound having at least two nucleophilic groups containing active hydrogen, said polymerization being performed after a precursor for the matrix polymer is brought into contact with a surface on which the electrolyte is to be formed;  
wherein the electrolyte layer is formed between two electrodes.
2. (Previously presented) The method according to Claim 1, wherein the electrolyte composition comprises a solvent to form a gel electrolyte.
3. (Previously presented) The method according to Claim 1, wherein the electrolyte composition comprises no solvent to form a solid electrolyte.
4. (Previously presented) The method according to Claim 1, wherein the electrolyte composition comprises an ionic liquid to form a gel electrolyte.
5. (Previously presented) The method according to Claim 1, wherein the electrolyte composition comprises a redox couple.
6. (Previously presented) The method according to Claim 5, wherein the redox couple is a combination of a halogen ion and a halide ion.
7. (Previously presented) The method according to Claim 6, wherein a halogen portion of the redox couple is iodine.
8. (Previously presented) A photocell comprising: a semiconductor layer composed of

semiconductor particles carrying a dye and an electrolyte layer, the layers being provided between a counter electrode and an electrode formed on a surface of a substrate;

wherein the electrolyte layer has a redox couple, an electrolyte composition, and a matrix polymer; and

wherein the matrix polymer is a polymer formed by polymerization of a first compound having at least two isocyanate groups and a second compound having at least two nucleophilic groups containing active hydrogen.

9. (Original) The photocell according to Claim 8, wherein the substrate is a transparent substrate.

10. (Previously presented) A method for manufacturing a photocell comprising:

injecting a mixed solution between a counter electrode and an electrode formed on a surface of a substrate, the mixed solution containing a first compound having at least two isocyanate groups, a second compound having at least two nucleophilic groups containing active hydrogen, and an electrolyte composition having a redox couple; and

polymerizing the first compound and the second compound after the mixed solution is brought into contact with the electrode formed on the surface of the substrate.

11. (Previously presented) The method for manufacturing a photocell, according to Claim 10, further comprising forming a semiconductor layer, composed of semiconductor particles carrying a dye, between the electrode and the counter electrode.

12. (Previously presented) The method for manufacturing a photocell, according to Claim 10, wherein the polymerizing is performed in accordance with a Michael addition reaction.

13. (Original) The method for manufacturing a photocell, according to Claim 10, wherein the electrolyte composition has a redox couple.

14. (Previously presented) A method for manufacturing a photocell comprising:
  - forming a semiconductor layer composed of semiconductor particles carrying a dye between a counter electrode and an electrode formed on a surface of a substrate;
  - applying a first compound having at least two isocyanate groups and a second compound having at least two nucleophilic groups containing active hydrogen; and
  - polymerizing the first compound and the second compound.